PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H0005631	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US03/34347	International filing date *(day/month/year)* 27 October 2003 (27.10.2003)	Priority date *(day/month/year)* 17 July 2003 (17.07.2003)
International Patent Classification (IPC) or national classification and IPC IPC(7): G03C 1/00; B05D 5/12; B32B 27/42; C08J 3/00 and US Cl.: 430/270.1, 311, 314; 427/96; 428/524; 524/463, 593; 528/491, 494, 495		
Applicant HONEYWELL INTERNATIONAL INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☑ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
16 December 2004 (16.12.2004)	29 August 2005 (29.08.2005)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Tae H. Yoon Telephone No. (571) 272-1700

Form PCT/IPEA/409 (cover sheet)(July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/34347

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed.

☒ the description:
pages 1-29 as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of .

☒ the claims:
pages 36 and 37 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages 30-35 , filed with the letter of 23 March 2005 (23.03.2005).

☒ the drawings:
pages 1-19 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of .

☐ the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of .

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages NONE

☒ the claims, Nos. 15, 23, 50, 72

☐ the drawings, sheets/~~fig~~ NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

*** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims NONE	YES
	Claims 1-14, 16-22, 24-49, 51-70 and 73-76	NO
Inventive Step (IS)	Claims NONE	YES
	Claims 1-14, 16-22, 24-49, 51-70 and 73-76	NO
Industrial Applicability (IA)	Claims 1-14, 16-22, 24-49, 51-70 and 73-76	YES
	Claims NONE	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-14, 16-22, 24-49, 51-55, 57-70 and 73-76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by DRAGE because DRAGE teaches an improved method for forming planarization films and a coating composition comprising novolac resin, fluorinated hydrocarbon surfactant and solvents at col. 2, line 47 to col. 5, line 25 and in examples 1. Claims neither require any improvement over any composition nor recite a particular value of the intermolecular forces or surface forces of the planarization components contrary to applicant's assertion. Reference composition would meet the invention absent further limitations. The invention is not limited to working examples and one need to consider a whole disclosure.

Claims 1-5, 7-14, 16, 17, 26-40, 42-49, 51-55, 57-61, 63-70 and 73-76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by HACKER et al because HACKER et al teach the instant composition and a layered product thereof in abstract, [0010], [0014], [0018]-[0022] and [0030]. Claims neither require any improvement over any composition nor recite a particular value of the intermolecular forces or surface forces of the planarization components contrary to applicant's assertion. Reference composition would meet the invention absent further limitations.

Claims 1-14, 16-22, 24-49, 51-55, 57-70 and 73-76 lack an inventive step under PCT Article 33(3) as being obvious over HACKER et al in view of DRAGE, MONTGOMERY or LEVERT et al. The instant invention further recites other solvents over HACKER et al. However, the use of such solvents in a planarization coating composition comprising a novolac resin is well known as taught by DRAGE, MONTGOMERY or LEVERT et al. Thus, it would be obvious to one skilled in the art to use such solvents of DRAGE, MONTGOMERY or LEVERT et al in HACKER et al since HACKER et al teach employing various solvents in [0018].

Claims 1-14, 16-22, 24-49, 51-70 and 73-76 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

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VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

There is no claim number 71.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

V. 2. Citations and Explanations:

Claims 1-3, 8-14, 26-29, 32-38, 43-49, 53-59, 64-70, 75 and 76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by NAKATO et al because NAKATO et al teach a planarization techniques that includes novolac resins and other organic polymers and solvents at col. 4, lines 30-58, col. 6, lines 33-54 and col. 7, line 39 to col. 8, line 16. The instantly recited viscosity relationship is an inherent property. Applicant asserts that the composition taught by NAKATO et al is the "reference composition" of the present invention on page and that NAKATO et al do not teach an improved solvent system. However, the instant claim recites a structural constituent such as a novolac resin and a solvent system, and said structural constituent is a novolac resin, for example, and does not include a solvent. Thus, the solvent system of the NAKANO et al lowers at least one of the intermolecular forces or surface forces of the planarization components such as a novolac resin inherently since said solvent dissolves said novolac resin. Claim neither requires any improvement over any composition nor recites a particular value of the intermolecular forces or surface forces of the planarization components.

Claims 1-55, 57-70 and 72-76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by DRAGE because DRAGE teaches an improved method for forming planarization films and a coating composition comprising novolac resin, fluorinated hydrocarbon surfactant and solvents at col. 2, line 47 to col. 5, line 25 and in examples 1. Also, see above with respect to applicant's assertion based on the "reference composition" of the present invention.

Claims 1-14, 18, 20-23, 26-49, 53-55, 57-70, 75 and 57-76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by LEVERT et al because LEVERT et al teach that organic-based precursors utilized for dielectric films can also be used as planarization. Also, see above with respect to applicant's assertion based on the "reference composition" of the present invention.

Claims 1-3, 8-14, 26-38, 41, 43-49, 53-59, 64-70, 75 and 76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by MONTGOMERY because MONTGOMERY teaches a photoresist composition comprising a resin such as novolac anda solvent such as propylene glycol monoether acetate and a layered product thereof at col. 6, lines 31-45 and col. 7, lines 13-32 and 56-67. Also, see above with respect to applicant's assertion based on the "reference composition" of the present invention.

Claims 1-4, 7-14, 26-39, 42-49, 53-60, 63-70, 75 and 76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by SHIH et al because SHIH et al teach the instant composition and a layered product thereof in [0021], [0022], [0025], [0029] and examples 5 and 10. Also, see above with respect to applicant's assertion based on the "reference composition" of the present invention.

Claims 1-5, 7-17, 26-40, 42-55, 57-61, 63-70 and 72-76 lack novelty and an inventive step under PCT Article 33(2)&(3) as being anticipated by HACKER et al because HACKER et al teach the instant composition and a layered product thereof in abstract, [0010], [0014], [0018]-[0022] and [0030]. Also, see above with respect to applicant's assertion based on the "reference composition" of the present invention.

Claims 1-55, 57-70 and 72-76 lack an inventive step under PCT Article 33(3) as being obvious over HACKER et al in view of DRAGE, ~~MONTGOMERY or LEVERT et al. The instant invention further recites other solvents over HACKER et al. However, the use of such~~

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

solvents in a planarization coating composition comprising a novolac resin is well known as taught by DRAGE, MONTGOMERY or LEVERT et al. Thus, it would be obvious to one skilled in the art to use such solvents of DRAGE, MONTGOMERY or LEVERT et al in HACKER et al since HACKER et al teach employing various solvents in [0018].

Claims 1-70 and 72-76 meet the criteria set out in PCT Article 33(4), and thus meet industrial applicability because the subject matter claimed can be made or used in industry.

---------- NEW CITATIONS ----------